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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
09/174,002	10/16/98	BOCH	E 95617-USA

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EXAMINER

NGUYEN, P

ART UNIT PAPER NUMBER

2732

DATE MAILED: 05/24/99

Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner of Patents and Trademarks

Office Action Summary

Application No.
09/174,002

Applicant(s)
Erik H. Boch, Alan Jaakkola

Examiner
Phuongchau Ba Nguyen

Group Art Unit
2732



☒ Responsive to communication(s) filed on Amendment in March 30, 1999

☐ This action is **FINAL**.

☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

A shortened statutory period for response to this action is set to expire 3 month(s), or thirty days, whichever is longer, from the mailing date of this communication. Failure to respond within the period for response will cause the application to become abandoned. (35 U.S.C. § 133). Extensions of time may be obtained under the provisions of 37 CFR 1.136(a).

Disposition of Claims

☒ Claim(s) 1-25 is/are pending in the application.

Of the above, claim(s) _____ is/are withdrawn from consideration.

☐ Claim(s) _____ is/are allowed.

☒ Claim(s) 1-25 is/are rejected.

☐ Claim(s) _____ is/are objected to.

☐ Claims _____ are subject to restriction or election requirement.

Application Papers

☐ See the attached Notice of Draftsperson's Patent Drawing Review, PTO-948.

☐ The drawing(s) filed on _____ is/are objected to by the Examiner.

☐ The proposed drawing correction, filed on _____ is ☐ approved ☐ disapproved.

☐ The specification is objected to by the Examiner.

☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119

☐ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).

☐ All ☐ Some* ☐ None of the CERTIFIED copies of the priority documents have been
☐ received.

☐ received in Application No. (Series Code/Serial Number) _____.

☐ received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

*Certified copies not received: _____

☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

Attachment(s)

☒ Notice of References Cited, PTO-892

☐ Information Disclosure Statement(s), PTO-1449, Paper No(s). _____

☐ Interview Summary, PTO-413

☐ Notice of Draftsperson's Patent Drawing Review, PTO-948

☐ Notice of Informal Patent Application, PTO-152

--- SEE OFFICE ACTION ON THE FOLLOWING PAGES ---

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Claim Rejections - 35 USC § 112

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claims 1-25 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Regarding to the method claims, claim 1 is rejected as being vague and indefinite it is not clear if a broadband wireless digital network or an interface system at a designated base station or a base station provides bi-directional, point to multipoint access to network interface unit (NIUs) at customer sites within a cellular area. Also, which one of these system such as the broadband wireless network, the interface system at base station, the base station, or NIU is provided a point to point bi-directional radio access link for intercell communication with a base station in an adjacent cellular area? Examiner is confused by the way of claims were presented because the claims do not show clearly and concisely the invention which disclosed in the specification on the applicant. Applicants should point out clearly and concisely how each system works and relates to one another.

Regarding to the method claim, claims 8 & 14 are rejected as being vague, and indefinite

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because it is impossible for a circuitry system to divide a large geographic area into a plurality cellular areas. Examiner does not know which part from the disclosed figures divides a large geographic area into plurality of overlapping cellular areas. It is unclear what device would provide a point to point bi-directional radio access link for intercell communication with base station in an adjacent cellular area. Applicants should present claims in a proper way so that the claims could be read on the disclosed figures.

Claims 2-7 are also rejected by the virtue of their dependency on Claim 1.

Claims 9-13 are also rejected by the virtue of their dependency on Claim 8.

Claims 15-18 are also rejected by the virtue of their dependency on Claim 14.

Regarding to claim 3 which recites an interface system comprising ATM radio interface card (ARIC). Claim 3 is rejected as being vague and indefinite because applicants do not show how ARIC works with the system which disclosed in claim. And where (at base station, at interface system or at customer sites?) would ARIC be added to in the broadband wireless network?

Regarding to claim 4 which recites that ARIC is designated at base station and is controlled by a network manager. Claim 4 is rejected as being vague and indefinite because

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applicants do not show how the ARIC being controlled by the network manager. And why the network manager control the ARIC at base station?

Regarding to claims 12 & 13 which recites additional ARICs may be implemented as required in order to provide access to additional NIUs within each cellular area. Claims 12 & 13 are rejected as being vague and indefinite because applicant do not show how ARIC being implemented to provide access to additional NIUs within each cellular area.

Regarding to claim 6, it is not clear how TDMA ARICs are provided for communication from base station to NIU, and FDMA ARICs are also provided for communication from NIU to base station.

Regarding to claim 7 which discloses FDMA ARICs are provided for bi-directional intercell radio communication. Claim 7 is rejected as being vague and indefinite because it is not seen how FDMA ARICs are provided for bi-directional intercell radio communication.

Regarding to claim 18 which calls for broadband wireless access is scalable by increasing the number of ARICs at selected base stations. Claim 18 is rejected as being vague and indefinite because it is unclear how increasing the number of ARIC at selected base station

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would relate with dividing geographic area into cellular area, thus make the broadband wireless access scalable?

Regarding to claim 19 which defines a switch system; a first radio interface means integral to the switching system for supporting communication between the base station and one or more network units within the cell; and second radio interface means integral to the switching system for providing an intercell whereby the base station communicates with a further base station associated with another cell of the network. Claim 19 is rejected as being vague and indefinite because it is unclear how the switch system would function in combination with the first radio interface means and the second radio interface means?

Claim 24 is rejected with the same reasons as set forth in claim 19.

Claims 25 is also rejected by the virtue of their dependency on Claim 24.

Regarding to claim 22 which discloses a base station wherein the high gain antenna is 36 to 42 db. Claim 22 is rejected as vague and indefinite because applicants do not show how the antenna achieve the high gain from 36 to 42 db, and what would be improved by using the high gain at this particular 36-42 db?

Claims 20-23 are also rejected by the virtue of their dependency on Claim 19.

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Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless --

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 1 & 2 are rejected under 35 U.S.C. 102(b) as being anticipated by Raychaudhuri et al (5,638,371)

Regarding to claim 1, Raychaudhuri et al discloses base station comprising an interface system (80, ATM network interface) for providing bi-directional, point to multipoint access network interface unit (48, NIU) at customer sites within a cellular area and for providing a point to point bi-directional radio access link for intercell communication to a base station in an adjacent cellular area (fig.3)

Regarding to claim 2 which discloses Broadband wireless network is an ATM system. This feature is well-known in the art.

5. Claims 8 & 14 are rejected under 35 U.S.C. 102(b) as being anticipated by Schaeffer et al (5,455,821)

Regarding to claim 8, Schaeffer et al discloses a sectored cell communication system (11), cell site (40,42,44 and 46) each are divided into sectors (see fig.2) and had a base station (see fig.1) and one or more customer sites (24, 26). It is inherent that each base station would

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had an radio interface card (transceiver, 28) to communicate with customer site (mobile units, 24,26) which would have a transceivers (NIU) for being able to communicate with base station (col.3, 15-50)

Claim 14 is rejected with the same reasons as set forth in claim 8.

6. Claims 19-21, 23-25 are rejected under 35 U.S.C. 102(b) as being anticipated by Sakamoto et al (5,408,514)

Regarding claim 19, Sakamoto et al discloses a switching system (1); a first radio interface means (415) integral to the switching system for supporting communications between the base station and one or more network interface units within the cell; a second radio interface means (414) integral to the switching system for providing an intercell link whereby the base station communicates with further base station associated with another cell of the network (fig.16)

Regarding to claim 23 which discloses switching system is an ATM system. This feature is well-known in the art.

Regarding to claims 20 & 25, it is inherent that the second radio interface means (414) including one or more radio interface cards coupled through a transmitter and receiver (base stations always have transmitters and receivers or transceivers with antennas for receiving and transmitting signals-this feature is well-known in the art) to a high gain antenna, because the second radio interface means controls (coupled) all base stations in the cell wirelessly.

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Regarding to claim 21, it is inherent that one or more radio interface are connected to a combiner which in turn is connected to the transmitter and receiver, because the central control system (414) is functioning as a switch for selecting base station which is the highest receiving level as mobile station moving into the cells.

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. Claims 3 -5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Raychaudhuri et al (5,638,371) in view of Vannucci (5,459,727).

Regarding to claim 3, Raychaudhuri et al does not disclose an interface system comprising an ARIC.

Vannucci discloses ARIC (radio interface unit, 314, fig.3).

Therefore, it would have been obvious to ones with ordinary skills in the art at the time of the invention was made to implement the radio interface unit of Vannucci as an ARIC in wireless communication for easy to replace the interface device when it is broken.

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Regarding to claim 4, Raychaudhuri et al does not disclose ARIC is controlled by a network manager

Vannucci disclose a network manager (a TDMA controller, 312, fig.3) for controlling radio interface unit.

Therefore, it would have been obvious to ones with ordinary skills in the art at the time of the invention was made to name the TDMA controller as a network manager for controlling the radio interface unit (ARIC) because the network manager and TDMA are functioning to control interface unit.

Regarding to claim 5, Raychaudhuri et al does not disclose NIU at customer sites which are at fixed locations within cellular area.

Vannucci discloses fixed radio station which comprised a fixed NIU for communicate with base station.

Therefore, it would have been obvious to ones with ordinary skills in the art at the time of the invention was made to include the fixed NIU feature at a fixed station. This is well-known feature.

9. Claims 6-7, 9-13, 15-18, 22 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

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10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Phuongchau Ba Nguyen whose telephone number is (703) 305-0093.

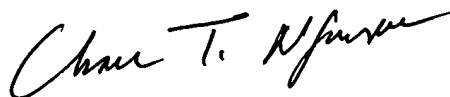
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Doug Olms, can be reached on (703) 305-4703. The fax number for this group is (703)305-9509.

Any inquiry of a general nature or relating to the status of this application should be directed to the group receptionist whose telephone number is (703) 305-3900.

PN

P. NGUYEN

May 19, 1999



CHAU NGUYEN
PRIMARY EXAMINER